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EXAMINER	
CHANKONG, DOHM	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/630,037	Applicant(s) PAI, RAMACHANDRA N.
	Examiner Dohm Chankong	Art Unit 2152

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1017* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1> Claims 1-17 are presented for further examination.

2> This is a non-final rejection.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3> Claims 1-6 and 12-17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

a. Claim 1 recites calculating a connectivity count, determining a maximum connectivity count and removing a vertex from a graph if the vertex's connectivity count is less than the maximum connectivity count. As presently claimed, claim 1 merely is directed towards an algorithm for manipulating vertices of a graph; a vertex on a graph is merely an abstract concept. As such, claim 1 merely claims an algorithm for manipulating abstract concepts; an algorithm is a judicially created exception to subject matter eligibility. If a judicial exception is present in a claim, the claim must be drawn to a practical application of the exception which can be established by either a physical transformation or a useful, concrete and tangible result.

Here, claim 1 is not saved by a practical application because there is no physical transformation of any subject matter. The graph as claimed is merely an abstract

object and is not grounded to any physical representation. There also is no useful, concrete or tangible result that flows from the use of the algorithm. The end result of the algorithm is simply a graph with removed vertices; as claimed, this graph is neither useful, concrete or tangible. The graph is simply an abstract object or idea. Claim 1 therefore only claims non-statutory subject matter and is rejected under §101.

b. Claims 12 and 13 are rejected for claiming a means in a computer medium where the means is claimed as a modulated carrier signal. The current position of the PTO is that claims that cover signals or other items that are not physical articles or objects fail to fall within a statutory category. Means claimed as signals fail to be structurally and functionally interconnected with the signal in such a manner to enable any usefulness to be realized. Therefore claim 12 is rejected for failing to claim subject matter that falls within the statutory categories for obtaining protection.

4> Claims 1-17 are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility. Claims 1, 6 and 12 are inoperative because they claim an algorithm that cannot achieve the stated purpose of the invention.

Claims 1, 6 and 12 are claims to an algorithm for maximizing group membership. The algorithm contains three steps:

(1) calculating a connectivity count of each vertex in a graph (Applicant defines connectivity count as a mathematical relationship illustrating interconnections between vertices; the Office interprets this term as referring to the number of connections for each vertex);

(2) determining a maximum connectivity count for each vertex (Applicant does not expressly define maximum connectivity count, see §112 rejection below; it is inferred from Figure 2 «item 36» of Applicant's drawing that maximum connectivity count refers to the "maximum quantity of vertices in a graph); and

(3) removing a vertex from the graph whose connectivity count is less than said maximum connectivity count (thus, a vertex is removed when the number of connections is less than the total number of vertices in the graph) .

As described by Applicant, the purpose of the algorithm is to obtain a graph whose nodes (vertices) where "each node in a grouping of nodes is connected to each other node in the grouping" [pg. 4 «lines 6-7»]. This relationship between nodes is known as a clique [pg. 4 «lines 11-12»]. The inoperativeness of the algorithm can best be established in an example.

According to Applicant's definition, in a graph of three nodes, a clique is achieved when each node is connected to each other node. Thus, as interpreted by the Office, a maximum clique of three nodes is in the form of a triangle as every node has two way communication between each other node. Each node has two connections – one to the other node.

In the parlance of Applicant's claim language, for a graph of three nodes, a clique is achieved when the connectivity count for each vertex is equal to two because each vertex has two connections each to the other vertex. A clique with three nodes has a maximum connectivity count of three (three vertices in the graph). As can be seen from this example, in a clique, the connectivity count for each vertex will always be less than the maximum

connectivity count, or the quantity of vertices in the graph. Since the connectivity count of a vertex will always be less than its maximum connectivity count, step (3) of the algorithm will always result in removing all vertices from the graph. Therefore the algorithm is inoperative as it will never establish a maximal clique because it will always eliminate all vertices of the graph.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5> Claims 5, 6, 10, 11, 16 and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Markush claims must be provided with support in the disclosure for each member of the Markush group. MPEP §608.01. Markush group recites members as being "selected from the group consisting of A, B and C." MPEP 2173.05(h). Claims 5, 10 and 16 recite that a vertex can be selected from a group consisting of: computing node, components on a circuit board, division of points in a pattern, partitions of items and combinations thereof. Claims 6, 11 and 17 recite a graph that is selected from a group consisting of: a cluster of nodes, circuit board components, pattern recognition, biological data, archeological data, project selection,

classification, fault tolerance, coding, computer vision, economics, information retrieval, signal transmission, alignment of DNA with protein sequences and combinations thereof.

Here, claims 5, 6, 10, 11, 16 and 17 are Markush groups based on their recitation of the language "selected from a group consisting of." Each member within the group must find support in the disclosure. While Applicant's disclosure superficially mentions that the algorithm of claim 1 can be applied to all of the various members, Applicant's disclosure does not provide substantive description as to each of the members that would enable one skilled in the art to have used in the invention with respect to each of the members.

It is unclear for example how one of ordinary skill in the art would have used the algorithm of claim 1 when the graph is "economics" or "classification" or a "combination thereof." A such, the disclosure does not describe the subject matter in such a way that would have enabled one of ordinary skill in the art to have used the invention.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6> Claims 5, 6, 10, 11, 16 and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 5, 10 and 16 recite that a vertex is selected from a group consisting of combinations of the members of the group. Claims 6, 11, and 17 recite that a graph is selected from a group consisting of combinations of the members of the group. Applicant's disclosure does not describe how a vertex can be a combination of, for example, a computing node and partitions of items or how a graph can be a combination of, for example, archeological data and economics. Applicant's disclosure does not convey to one of ordinary skill in the art that Applicant had possession of the invention as claimed.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7> Claims 12-17 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Claim 12 recites "removing said least connected vertex from said graph." However, Applicant's disclosure does not simply remove the least connected vertex; rather, Applicant's disclosure states that there is first a "determin[ation] if the connectivity count of a least connected vertex is equal to the quantity of vertices in the graph" [pg. 4 «lines 21-23»]. Therefore, claim 12 is incomplete for omitting the essential step of comparing the least connected vertex's connectivity count to the quantity of vertices in the graph.

8> Claims 5, 6, 10, 11, 16 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As discussed above, these claims are Markush claims that recite selecting a vertex or a graph from groups consisting of a list of members. The members of the group are disclosed in the specification to possess at least one property in common which is mainly responsible for their function in the claimed relationship, and it is clear from their very nature or from the prior art that all of them possess this property. MPEP 2173.05(h).

First, the claim language is confusing. It is unclear what is meant by claiming a vertex as a partition of items or a graph as "economics" or "classification." In other words, it is unclear how a graph could be construed as economics, classification or any of the other members of the Markush group that are claimed.

Second, the members claimed within the Markush groups do not share a property in common that is responsible for their function in the claimed relationship. Nor is it clear from their very nature that they all possess a similar trait that would link them together within the Markush group. Rather, the claims are directed towards disparate fields of use such as archeological data, classification, fault tolerance, alignment of DNA with protein sequences and economics. Therefore, Applicant's use of the Markush group is incorrect.

9> Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

c. Claims 1, 7 and 12 are recite "determining a maximum connectivity count." Applicant's disclosure does not describe to one of ordinary skill in the art how to determine a maximum connectivity count. The relevant portion of the disclosure

recites that "[a] connectivity count of each vertex in a graph is calculated, and a maximum connectivity count for each vertex is determined based upon the calculation" [pg. 3 «lines 2-3»]. The rest of the disclosure is silent as to both the meaning of "maximum connectivity count" and how it is determined.

The disclosure does however describe comparing a calculated connectivity count of each vertex with "the maximum number of vertices in the graph" [pg. 5 «line 1»]. Because the disclosure does not elaborate, it is not entirely clear that the claimed maximum connectivity count corresponds with the maximum number of vertices in the graph. Therefore, claims 1, 7 and 12 are rejected for being indefinite. For the purposes of this action, the term "maximum connectivity count" will be interpreted as the "maximum number of vertices in the graph"

d. Claim 13 is rejected for reciting "said means selected from a group consisting of." Claim 12, on which claim 13 is dependent, recites three different means. It is therefore unclear to which "mean" claim 13 is referring.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10> Claims 1-4, 7-9 and 12-15 are rejected under 35 U.S.C §103(a) as being unpatentable over Östergård, "A Fast Algorithm for the Maximum Clique Problem."

11> As to claim 1, Östergård discloses a method for maximizing group membership comprising:

calculating a connectivity count of each vertex in a graph [pg. 202, section 2.4 - Ordering the vertices : calculating the degree of the vertex where the degree represents the number of connections to other vertices];

determining a maximum connectivity count for each vertex from said calculation [pg. 199, 2.1 – Old Algorithms : "the number of vertices in the graph is n" | pg. 200, Algorithm 2 : max variable];

removing a vertex from said graph with said connectivity count less than said maximum connectivity count [pgs. 200-202 : pruning those vertices whose connections are less then the max variable].

Östergård does not expressly disclose the term "maximum connectivity count" but does disclose calculating the number of vertices in the graph. As discussed in the §112 rejection above, "maximum connectivity count" is interpreted as number of vertices in the graph. Thus, it would have been obvious for one of ordinary skill in the art to have reasonably inferred that Östergård's disclosure of number of vertices in the graph is equivalent to Applicant's claimed "maximum connectivity count."

12> As to claim 2, Östergård discloses updating said connectivity count for all remaining vertices in said graph following removal of a single vertex from said graph [pg. 200, Algorithm 2 (line 17)].

13> As to claim 3, Östergård discloses individually removing all vertices with said connectivity count less than said maximum connectivity count in said graph [pgs. 201-202 : pruning vertices].

14> As to claim 4, Östergård discloses removing all vertices in said graph until said connectivity count of a least connected vertex is equal to said maximum connectivity count [pg. 200, Algorithm 2 (lines 24-29) : for loop].

15> As to claims 7-9, as they do not teach or further define over previously claimed limitations, they are rejected for at least the same reasons set forth for claims 1-4.

16> As to claim 12, Östergård discloses an article comprising:

a computer-readable signal-bearing medium [pg. 206 : Östergård discusses utilizing a CPU; therefore it would have been obvious for one of ordinary skill in the art to have reasonably inferred a computer-readable medium];

means in the medium for calculating a connectivity for each vertex in a graph [pg. 202, section 2.4 - Ordering the vertices];

means in the medium for selecting a least connected vertex for removal from a clique

in said graph [pg. 202, section 2.4 - Ordering the vertices : choosing the vertex with the least degree]; and

means in the medium for removing said least connected vertex from said graph [pgs. 200-202 : pruning those vertices whose connections are less then the max variable].

17> As to claim 13, Östergård does not expressly discloses said means is selected from a group consisting of a recordable data storage medium but does disclose utilizing a CPU. The use of a data storage medium can be inferred from this disclosure since data storage mediums are ubiquitously installed in computers.

18> As to claim 14, Östergård discloses said means for selecting a least connected vertex for removal from a clique in said graph includes placing vertexes of a graph in descending order [pg. 202, section 2.4 - Ordering the vertices : placing the vertex with smaller degree first].

19> As to claim 15, see rejection of claim 2.

20> Claims 5, 6, 10, 11, 16 and 17 are rejected under 35 U.S.C §103(a) as being unpatentable over Östergård in view of Pardalos et al, "An Exact Parallel Algorithm for the Maximum Clique Problem" ["Pardalos"], in further view of Szymanski et al, "Spanning Tree Algorithm for Spare Network Capacity" [Szymanski].

21> As to claim 5, 10 and 16, Östergård does not expressly disclose said vertex being selected from a group consisting of: a computing node, components on a circuit board, division of points in a pattern, or partition of items.

22> In the same field of invention, Pardalos is directed towards the same problem as Östergård. Pardalos is concerned with finding maximum cliques on general graphs. Pardalos discloses that a solution to such a problem has wide ranging applications, including circuit design, geometry and fault diagnosis. As such, Pardalos teaches selecting a vertex from components on a circuit board (circuit design), points in a pattern (geometry) and partition of items (fault diagnosis of multiprocessor systems) [pg. 3]. It would have been obvious to one of ordinary skill in the art to incorporate Pardalos' teachings into Östergård; namely to modify Östergård's maximum clique algorithm for use with components on a circuit board and points in a pattern. Pardalos' teaches that finding maximum cliques, as in Östergård, are especially useful such applications [Pardalos, pgs. 2-3].

23> In the same field of invention, Szymanski discloses applying maximum clique techniques to problems concerning networks. Szymanski discloses that a vertex in a graph is a computer node [pg. 0448]. It would have been obvious to one of ordinary skill in the art to incorporate Szymanski's teachings into Östergård; namely to modify Östergård for use with computer nodes. One would have been motivated to provide such a modification to use Östergård's algorithm for network capacity problems as taught by Szymanski.

24> As to claims 6, 11 and 17, Östergård discloses said graph is a cluster of nodes [pg. 201, Figure 1] but does not disclose the other applications as claimed.

25> Pardalos discloses applying maximum clique techniques to graphs that are selected from a group consisting of: circuit board components, pattern recognition, archaeology data, project selection, classification, fault tolerance, coding, computer vision, economics, information retrieval, signal transmission and alignment of DNA with protein sequences [pgs. 2-3]. It would have been obvious to one of ordinary skill in the art to have modifies Kevorkian to include the various graphs as taught by Pardalos. Pardalos teaches that maximum clique techniques can be applied to wide variety of applications in science and engineering. One would have been motivated to provide such a modification to increase the functionality of Östergård's system with respect to the variety of disciplines as taught by Pardalos.

26> Claims 1-4, 7-9 and 12-15 are rejected under 35 U.S.C §103(a) as being unpatentable over Kevorkian, U.S Patent No. 5.446.908.

27> As to claim 1, Kevorkian discloses a method for maximizing group membership comprising:

calculating a connectivity count of each vertex in a graph [Figure 3 | column 5 «lines

35-51» where : Kevorkian's adjacency lists disclose the connectivity count (degree) for each vertex in the graph (Figure 2)];

determining a maximum connectivity count for each vertex from said calculation [Figure 5 «item 510» | column 8 «lines 46-58» | column 9 «lines 6-60» | column 20 «lines 55-65» where : Kevorkian compares the degree of each vertex to variable RANKC which represents the number of vertices in the graph];

removing a vertex from said graph with said connectivity count less than said maximum connectivity count [Figures 21A, 21B | column 8 «lines 46-58» | claim 5 where : Kevorkian prunes the graph G to obtain a maximal clique].

Kevorkian does not expressly disclose the term "maximum connectivity count" but does disclose removing vertices from the graph G whose degree is less than a calculated variable to delete them from the graph [Figure 8 | Figure 11 : the variable RANKC]. This functionality is analogous to what is claimed and therefore one of ordinary skill in the art would have interpreted Kevorkian's functionality of deleting nodes with certain degrees from the graph as corresponding to Applicant's steps.

28> As to claim 2, Kevorkian discloses updating said connectivity count for all remaining vertices in said graph following removal of a single vertex from said graph [Figure 5 «item 590»].

29> As to claim 3, Kevorkian discloses individually removing all vertices with said connectivity count less than said maximum connectivity count in said graph [column 8 «lines 46-55»].

30> As to claim 4, Kevorkian discloses removing all vertices in said graph until said connectivity count of a least connected vertex is equal to said maximum connectivity count [column 8 «lines 46-55» | column 20 «lines 55-65» | column 21 «lines 28-38»].

31> As to claims 7-9, as they do not teach or further define over previously claimed limitations, they are rejected for at least the same reasons set forth for claims 1-4.

32> As to claim 12, Kevorkian discloses an article comprising:

a computer-readable signal-bearing medium [column 25 «lines 3-15»];

means in the medium for calculating a connectivity for each vertex in a graph [Figure 3];

means in the medium for selecting a least connected vertex for removal from a clique in said graph [column 7 «lines 44-61»]; and

means in the medium for removing said least connected vertex from said graph [column 8 «lines 46-54»].

33> As to claim 13, Kevorkian discloses said means is selected from a group consisting of a recordable data storage medium [claim 7].

34> As to claim 14, Kevorkian discloses said means for selecting a least connected vertex for removal from a clique in said graph includes placing vertexes of a graph in descending order [column 6 «lines 37-39»].

35> As to claim 15, see rejection of claim 2.

36> Claims 5, 6, 10, 11, 16 and 17 are rejected under 35 U.S.C §103(a) as being unpatentable over Kevorkian in view of Pardalos, in further view of Szymanski.

37> As to claim 5, 10 and 16, Kevorkian does disclose that said vertex is part of a partition of items [column 7 «lines 3-5»] but does not expressly disclose said vertex being selected from a group consisting of: a computing node, components on a circuit board, or division of points in a pattern.

38> In the same field of invention, Pardalos is directed towards the same problem as Kevorkian. Pardalos is concerned with finding maximum cliques on general graphs. Pardalos discloses that a solution to such a problem has wide ranging applications, including circuit design and geometry. As such, Pardalos teaches selecting a vertex from components on a circuit board (circuit design) and points in a pattern (geometry) [pg. 3]. It would have been obvious to one of ordinary skill in the art to incorporate Pardalos' teachings into Kevorkian; namely to modify Kevorkian for use with components on a circuit board and points in a

pattern. Pardalos' teaches that finding maximum cliques, as in Kevorkian, are especially useful such applications [pgs. 2-3].

39> In the same field of invention, Szymanski discloses applying maximum clique techniques to problems concerning networks. Szymanski discloses that a vertex in a graph is a computer node [pg. 0448]. It would have been obvious to one of ordinary skill in the art to incorporate Szymanski's teachings into Kevorkian; namely to modify Kevorkian for use with computer nodes. One would have been motivated to provide such a modification to use Kevorkian's algorithm for network capacity problems as taught by Szymanski.

40> As to claims 6, 11 and 17, Kevorkian discloses said graph is a cluster of nodes [Figure 2] but does not disclose the other applications as claimed.

41> Pardalos discloses applying maximum clique techniques to graphs that are selected from a group consisting of: circuit board components, pattern recognition, archaeology data, project selection, classification, fault tolerance, coding, computer vision, economics, information retrieval, signal transmission and alignment of DNA with protein sequences [pgs. 2-3]. It would have been obvious to one of ordinary skill in the art to have modifies Kevorkian to include the various graphs as taught by Pardalos. Pardalos teaches that maximum clique techniques can be applied to wide variety of applications in science and engineering. One would have been motivated to provide such a modification to increase the

functionality of Kevorkian's system with respect to the variety of disciplines as taught by Pardalos.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

See PTO-892 for list of references.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dohm Chankong whose telephone number is 571.272.3942. The examiner can normally be reached on Tuesday-Friday [7:30 AM to 4:30 PM].

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571.272.3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DC

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SUPERVISORY PATENT EXAMINER